

EM Technology Development & Deployment

NETL Perspective



*Industry Partnerships for
Environmental Science and
Technology Conference*

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www.netl.doe.gov



National Energy Technology Laboratory



- One of DOE's 17 national laboratories
- Government owned and operated
- Sites in Oklahoma, Pennsylvania, and West Virginia
- More than 1,100 federal and support contractor employees



Our Mission

- Resolve the environmental, supply, and reliability constraints of producing and using fossil resources
- **Support development and deployment of environmental technologies to remediate DOE's weapons complex**



What We Do

- Shape, fund, and manage extramural RD&D
- Conduct onsite research
- Support energy policy development
- Assist in international deployment of energy technologies
- Contribute to best business practices within DOE



Government-Industry Partnerships

Government requirements

- Define problem & performance targets
- Establish realistic schedule & cost targets
- Ensure stable funding & commitment
- Establish acceptable risk boundaries

Private industry requirements

- Share in financial & technical risks
- Align business plans with Government's needs
- Commit to commercial offering
- Be able to compete in market



NETL Programs to Support EM OST

- Industry and University Programs
- Deactivation and Decommissioning (D&D) Focus Area
- Small Business Innovative Research
- Unsolicited proposals



Industry and University Programs

Small
Businesses



Large
Businesses

Universities
and Non-Profits

R&D Performers



Develop, Demonstrate,
and Deploy Technologies



Multiple Site
Application

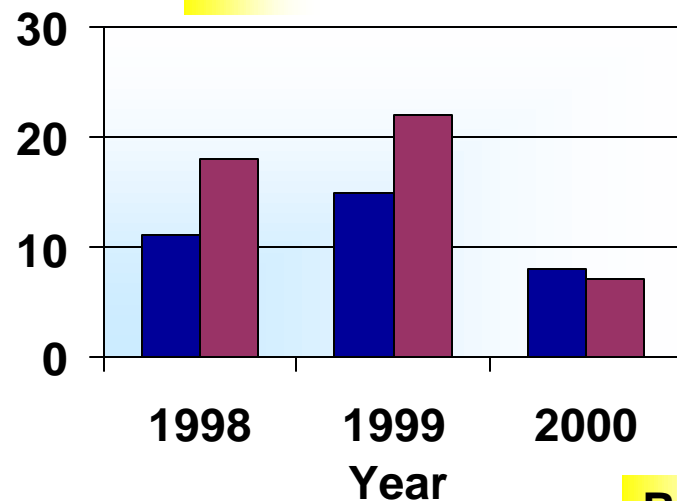
Mission

Foster private sector and universities to develop, demonstrate, and deploy cost-effective environmental technologies at DOE sites

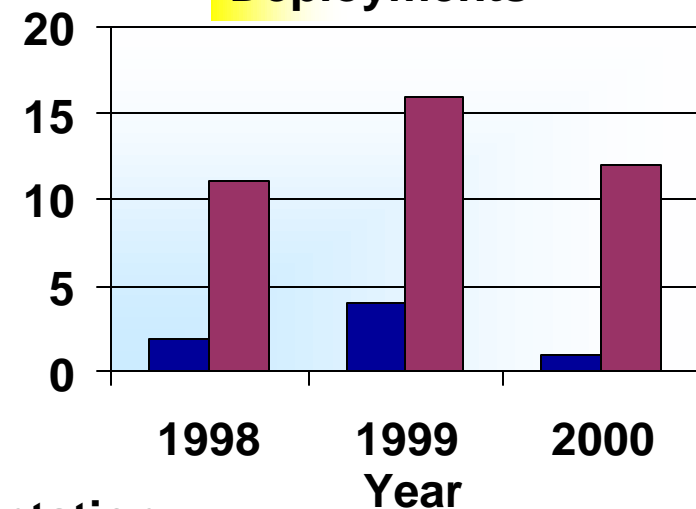


Industry & University Programs Success Measures

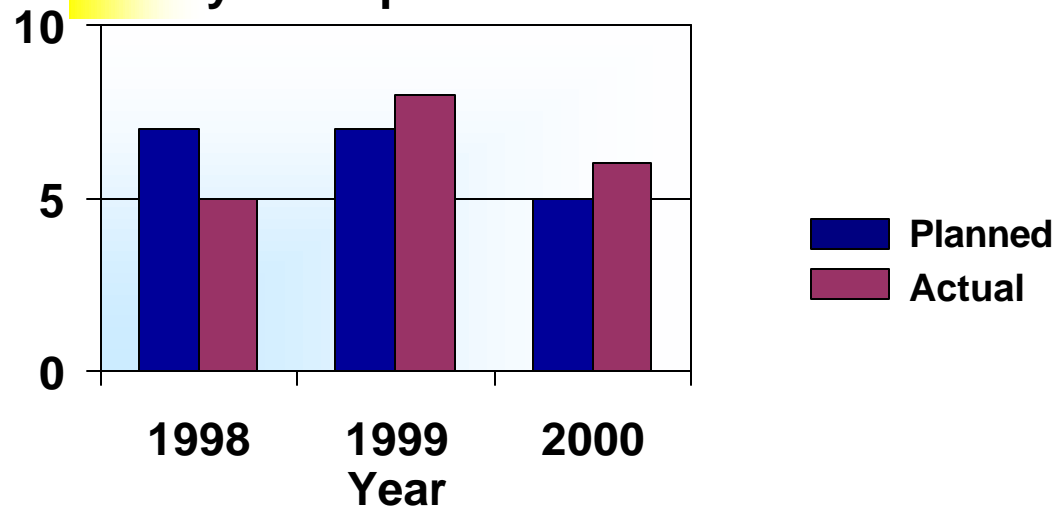
Demonstrations



Deployments



Ready for Implementation



D&D Focus Area Mission

Provide technological solutions which reduce cost, risk, and schedule to deactivate and decommission DOE's radiologically contaminated excess facilities



"There are strong safety and economic incentives for developing and using innovative D&D technologies . . .

The long time frame for completing D&D allows for substantive research to be completed and applied."

National Research Council 2001



D&D Focus Area Has Four Components

Science
Environmental
Management
Science
Program

Applied RD&D
Applied Research,
Development, and
Demonstration

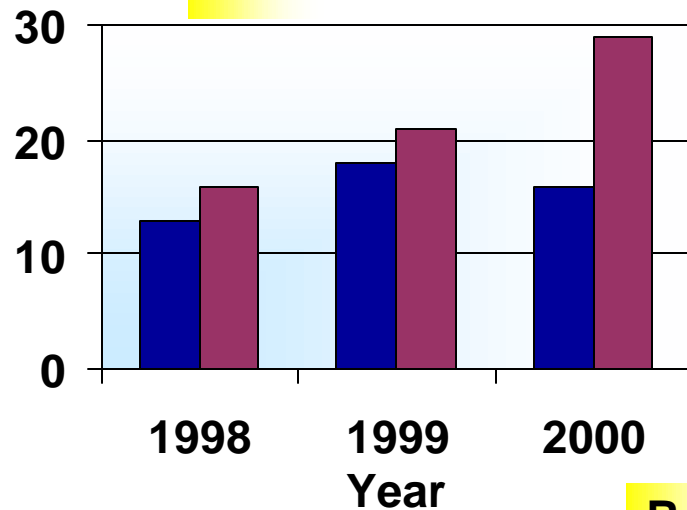
Deployment
Accelerated
Site
Technology
Deployment

International
Collaboration with
Argentina,
Russia,
U.K.

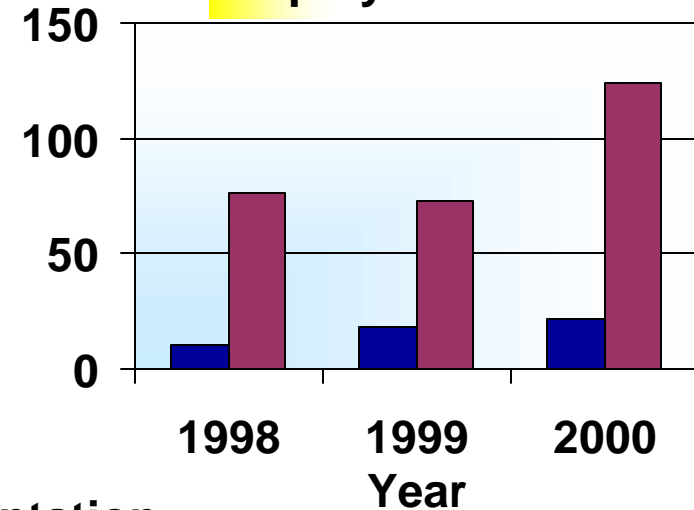


D&D Focus Area Success Measures

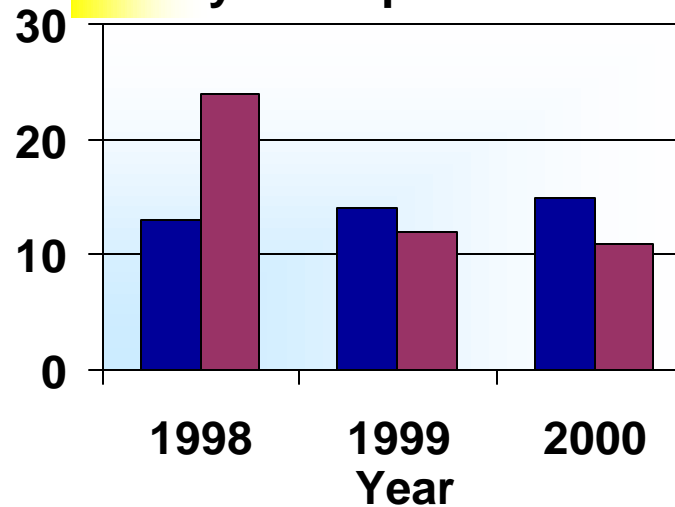
Demonstrations



Deployments



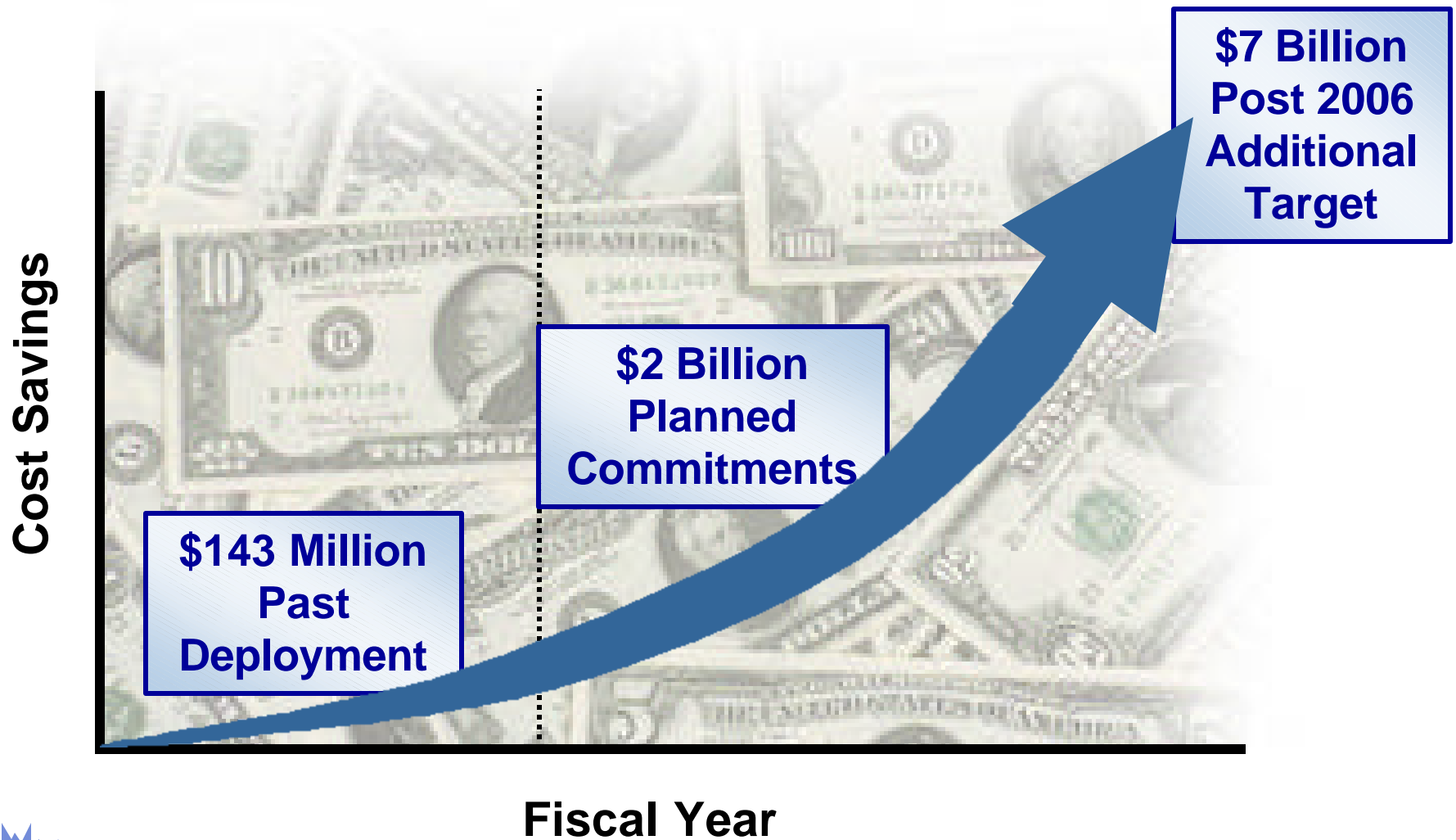
Ready for Implementation



Planned
Actual



Progress Reducing EM's D&D Mortgage

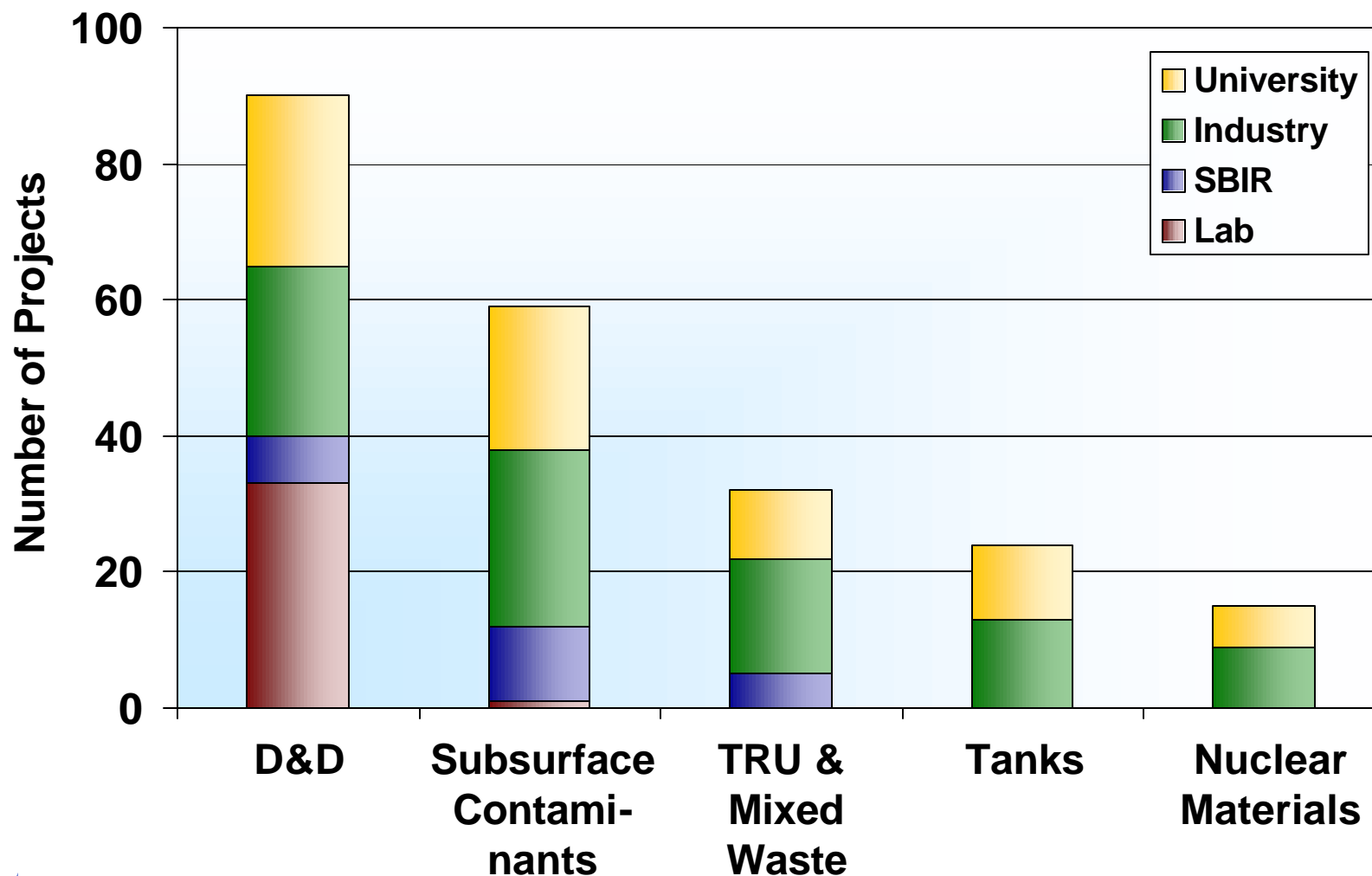


Near-Term Procurement Opportunities

- **In Situ Treatment for Soil and Groundwater Contamination in Difficult Conditions**
- **Sorting, Sizing, and Repackaging Remote Handled TRU Boxes**
- **TRU Waste Handling**
- **Broad Agency Announcement for Applied Research Across Focus Areas**



EM-50 Projects Managed by NETL



Wireline Cone Penetrometer System



3M Selective Separation Cartridge Technology



Well Injection Depth Extraction



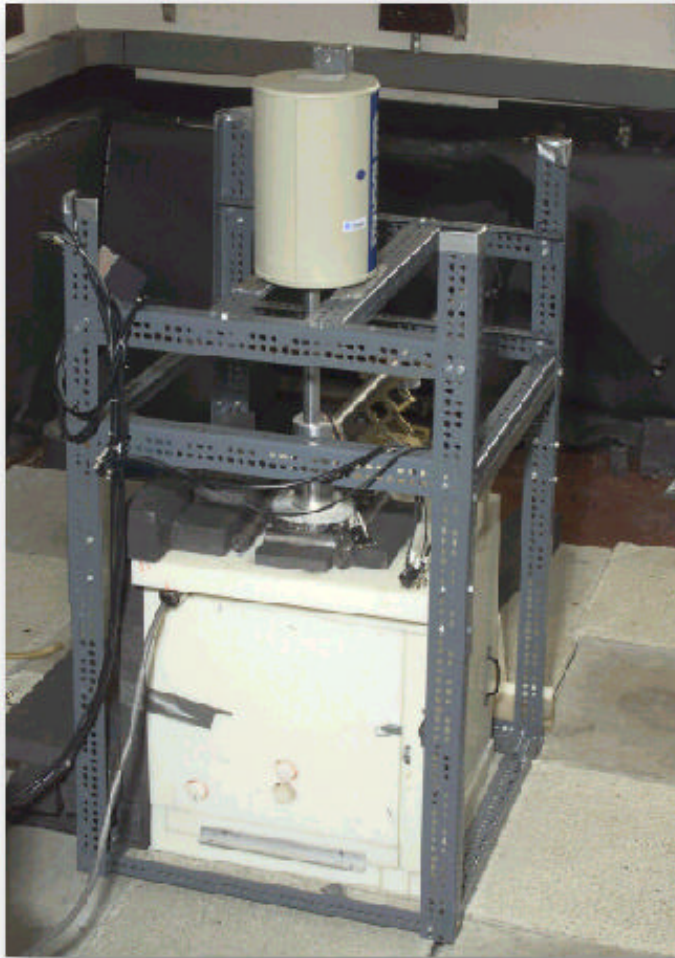
Pipe Explorer™



Waste Inspection Tomography



Pulsed Gamma Neutron Activation Analysis



Pulsating Mixer Pump



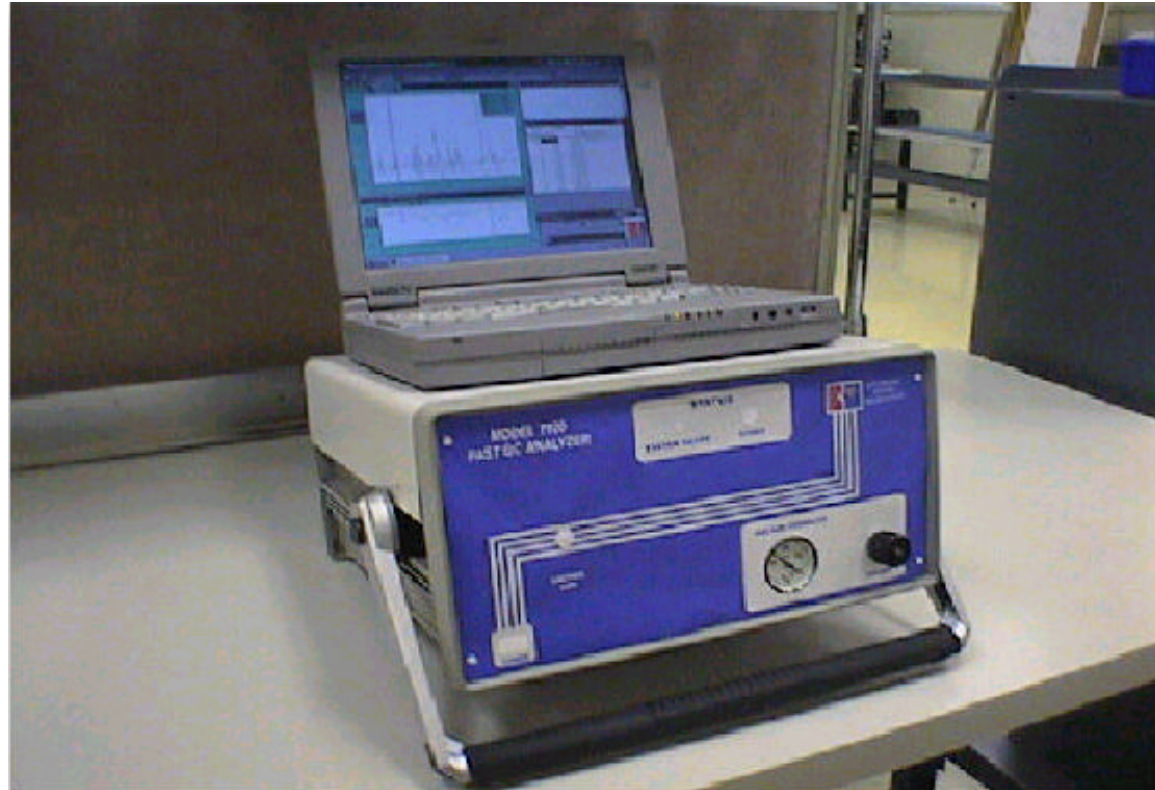
Personal Ice Cooling System



Robotic End Effector



zNOSE™



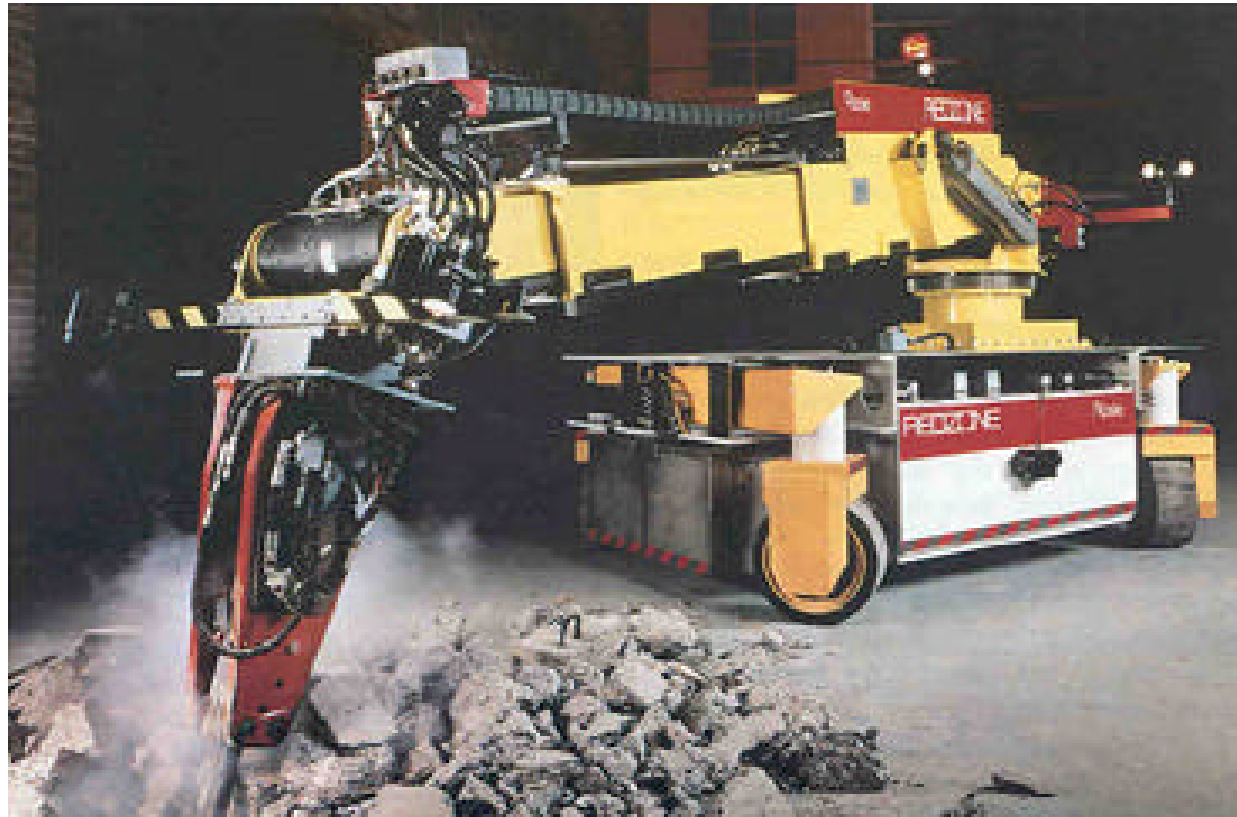
Oxy-Gasoline Cutting Torch



Lasagna™



Rosie



Soft-Sided Waste Containers



TechXtract®



In Situ Object Counting System



Houdini



3M Rapid Liquid Sampler



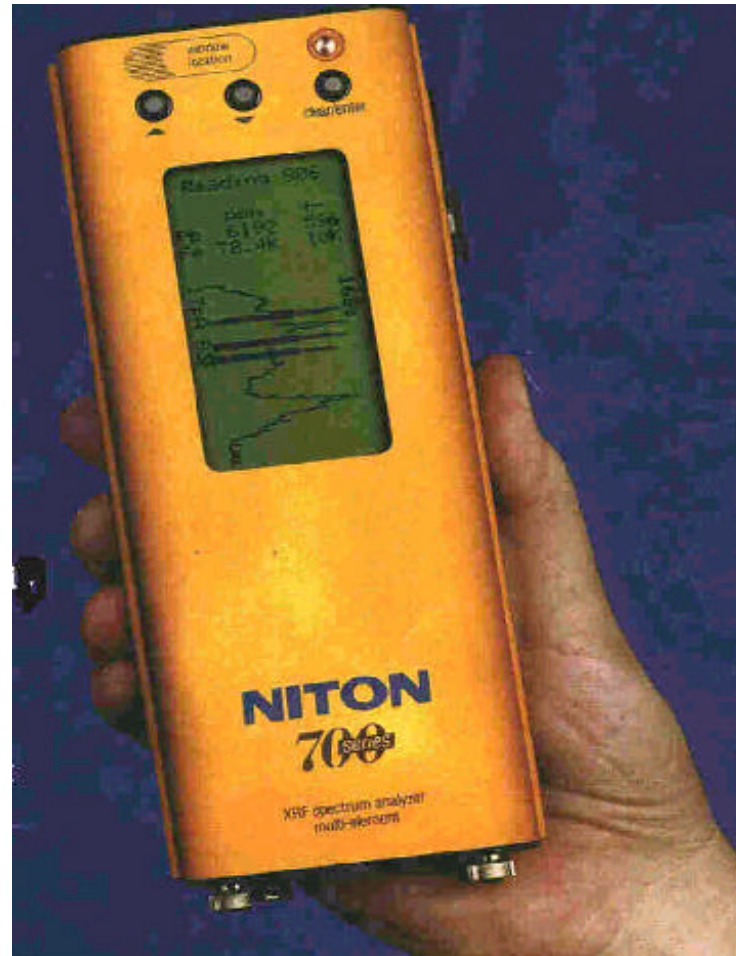
Nochar PetroBond®



High Productivity Vacuum Blasting



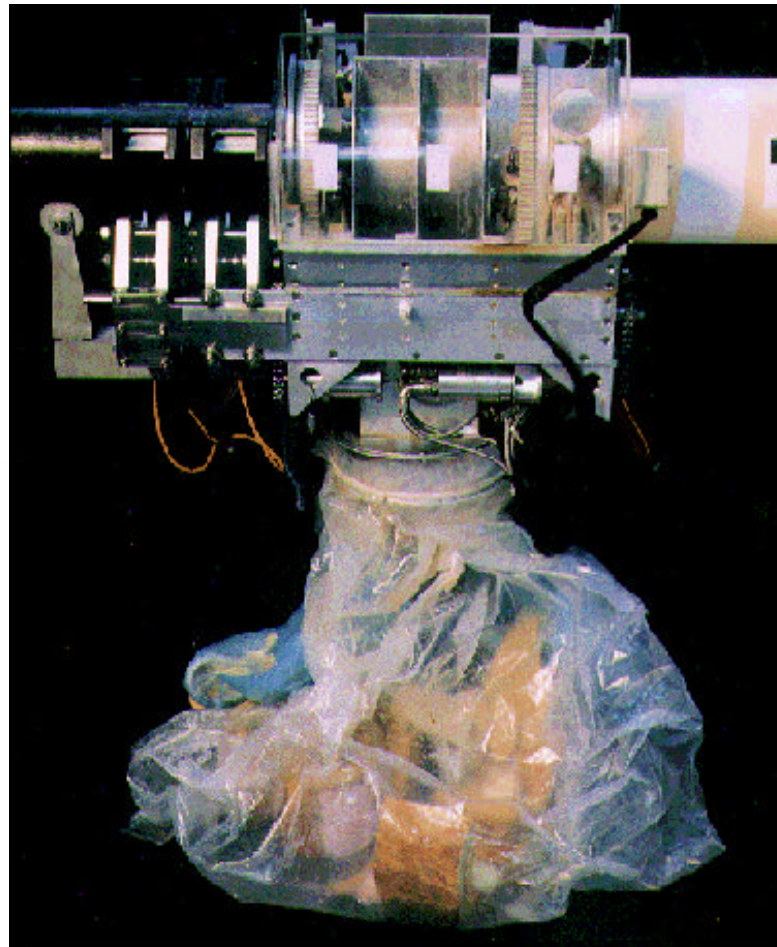
Lead Paint Analyzer



Protective Clothing Based on Permselective Membrane and Carbon Adsorption



BOA



BERT™



Modified Brokk Demolition Machine with Remote Console



Russian Gamma Locator Device



Surveillance and Measurement System



EM Spinoffs Address National Needs



Photos: International Union of Operating Engineers